

The diagram illustrates the internal architecture of a disk drive system, divided into two main sections: 10 (Host/Control) and 11 (Drive/Actuator).

**Section 10 (Host/Control):**

- MPU (12):** Microprocessor Unit, connected to the ODC and MEM.
- MEM (18):** Memory, connected to the MPU and I/F.
- I/F (17):** Interface, connected to MEM and DSP.
- OSC (101):** Oscillator, connected to the DSP.
- DSP (16):** Digital Signal Processor, the central control unit for the drive, connected to the ODC, WRITE LSI, READ LSI, and various actuators/detectors.

**Section 11 (Drive/Actuator):**

- ODC (14):** Optical Disk Controller, containing a **FORMATTER (14-1)** and an **ECC PROCESSOR (14-2)**, connected to the MPU and DSP.
- WRITE LSI (20):** Contains **LD CONTROL (22)** and **WRITE MOD (21)**, connected to the ODC and LASER DIODE UNIT.
- READ LSI (24):** Contains **READ DEMOD (25)** and **FREQ SYNTHESIZER (26)**, connected to the ODC and DSP.
- LASER DIODE UNIT (30):** Contains a **LD (30-2)** and a **PD (30-1)**, connected to the WRITE LSI.
- HEAD AMP (34) and ID/MO DETECTOR (32):** Connected to the READ LSI and DSP.
- TEMP SENSOR (36):** Temperature sensor, connected to the DSP.
- SPM (40):** Servo Position Monitor, connected to the DSP.
- ELECTROMAGNET (42):** Connected to the DSP.
- FES DETECTOR (45) and TES DETECTOR (47):** Focus Error and Track Error sensors, connected to the DSP.
- TZC DETECTION (50):** Zero Crossing Detection, connected to the DSP.
- LP SENSOR (54):** Load Position Sensor, connected to the DSP.
- POSITION DETECTION (92):** Connected to the DSP.
- DRIVER (58, 62, 66, 93):** Multiple drivers connected to the DSP, controlling the actuators.
- FOCUS ACTUATOR (60):** Connected to the DSP via driver 58.
- LENS ACTUATOR (64):** Connected to the DSP via driver 62.
- VCM (68):** Voice Coil Motor, connected to the DSP via driver 66.
- PHASE PLATE ACTUATOR (94):** Connected to the DSP via driver 93.

**Connections:**

- The **DSP (16)** is the central hub, receiving signals from the **MPU (12)**, **MEM (18)**, **I/F (17)**, **OSC (101)**, and various sensors/detectors.
- The **DSP (16)** sends control signals to the **ODC (14)**, **WRITE LSI (20)**, **READ LSI (24)**, and the various **DRIVER** blocks.
- The **ODC (14)** manages data flow between the **MPU (12)** and the **WRITE LSI (20)** and **READ LSI (24)**.
- The **WRITE LSI (20)** and **READ LSI (24)** manage data flow between the **ODC (14)** and the **LASER DIODE UNIT (30)**.
- The **LASER DIODE UNIT (30)** provides the optical signal to the **HEAD AMP (34)** and **ID/MO DETECTOR (32)**.
- The **HEAD AMP (34)** and **ID/MO DETECTOR (32)** provide feedback signals to the **DSP (16)**.
- The **TEMP SENSOR (36)**, **SPM (40)**, **ELECTROMAGNET (42)**, **FES DETECTOR (45)**, **TES DETECTOR (47)**, **TZC DETECTION (50)**, **LP SENSOR (54)**, and **POSITION DETECTION (92)** all provide feedback signals to the **DSP (16)**.
- The **DSP (16)** sends control signals to the **DRIVER** blocks, which in turn control the **FOCUS ACTUATOR (60)**, **LENS ACTUATOR (64)**, **VCM (68)**, and **PHASE PLATE ACTUATOR (94)**.

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FIG. 2

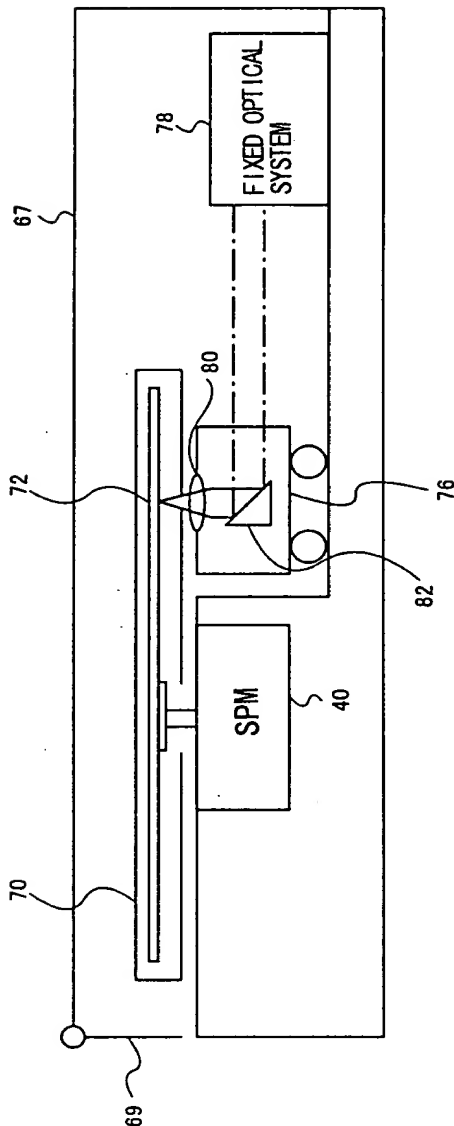
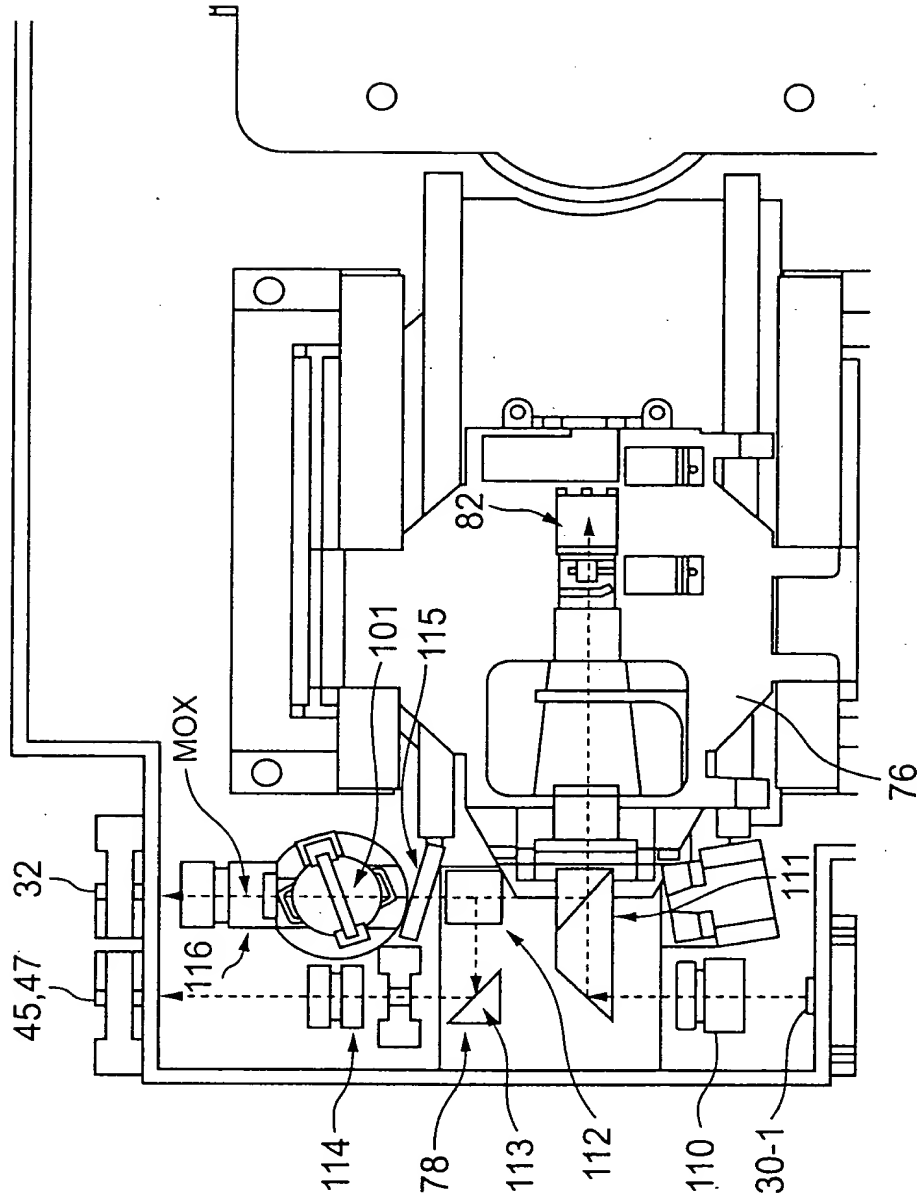




FIG. 4



**FIG. 5**

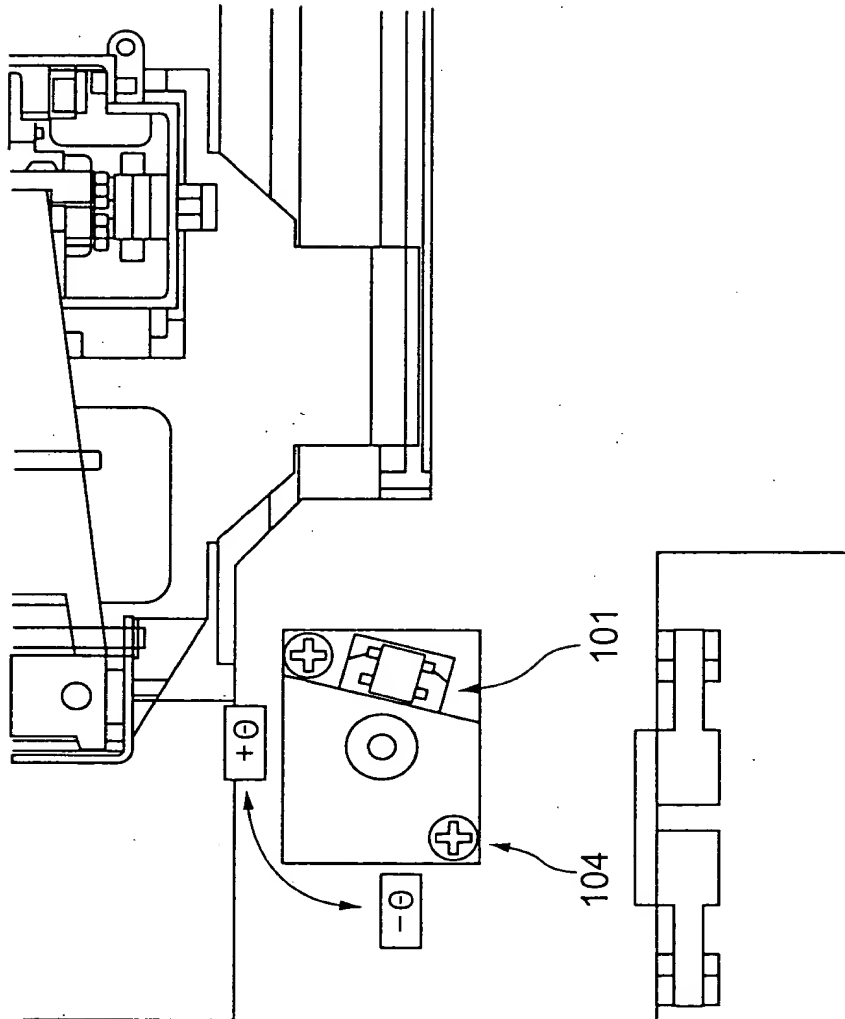


FIG. 6

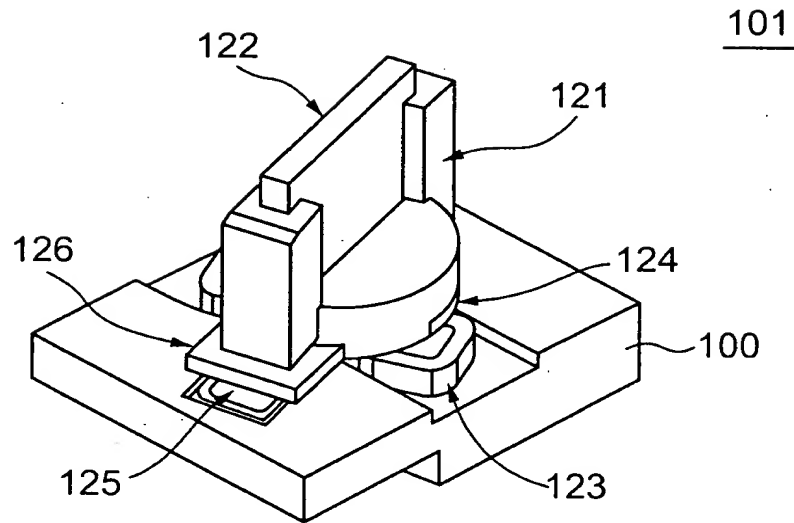


FIG. 6



FIG. 8

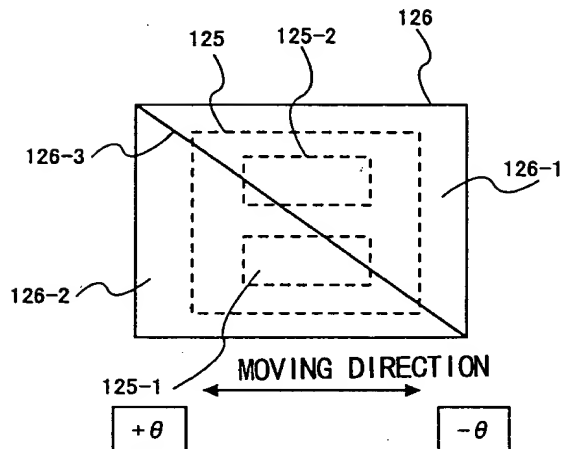
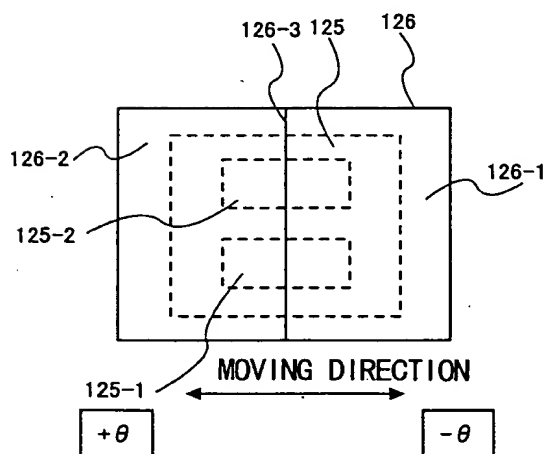


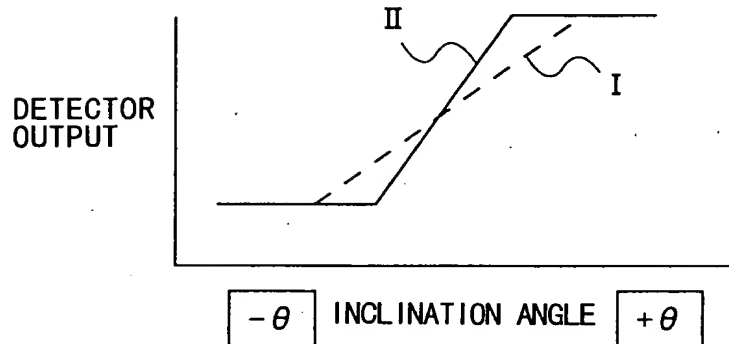
FIG. 9



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FIG. 10



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FIG. 11

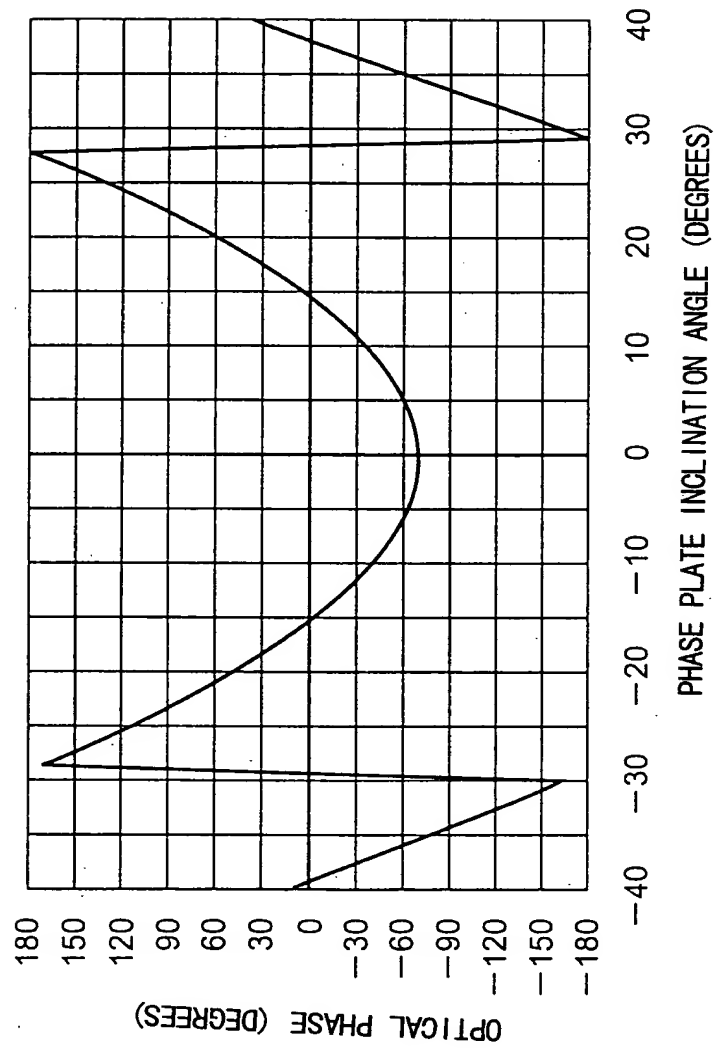


FIG. 12

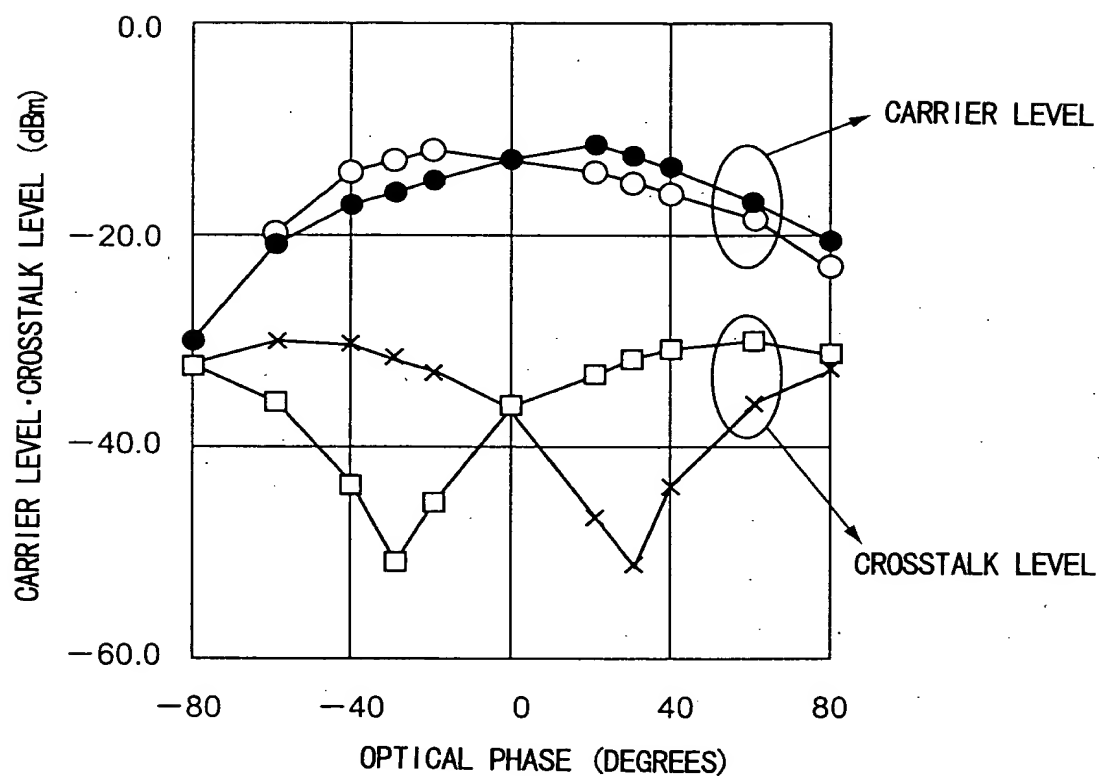
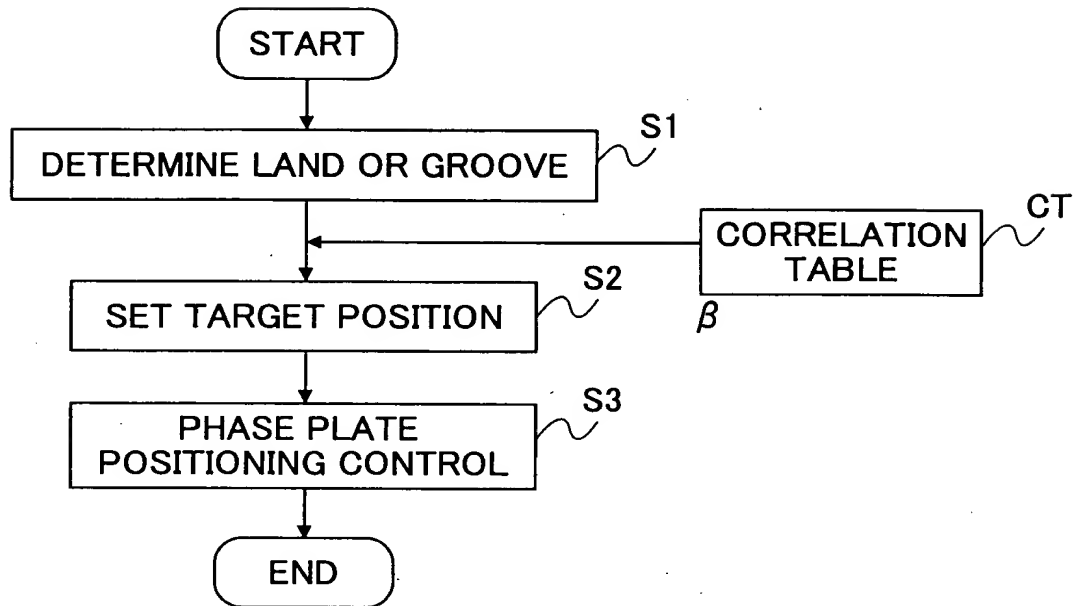
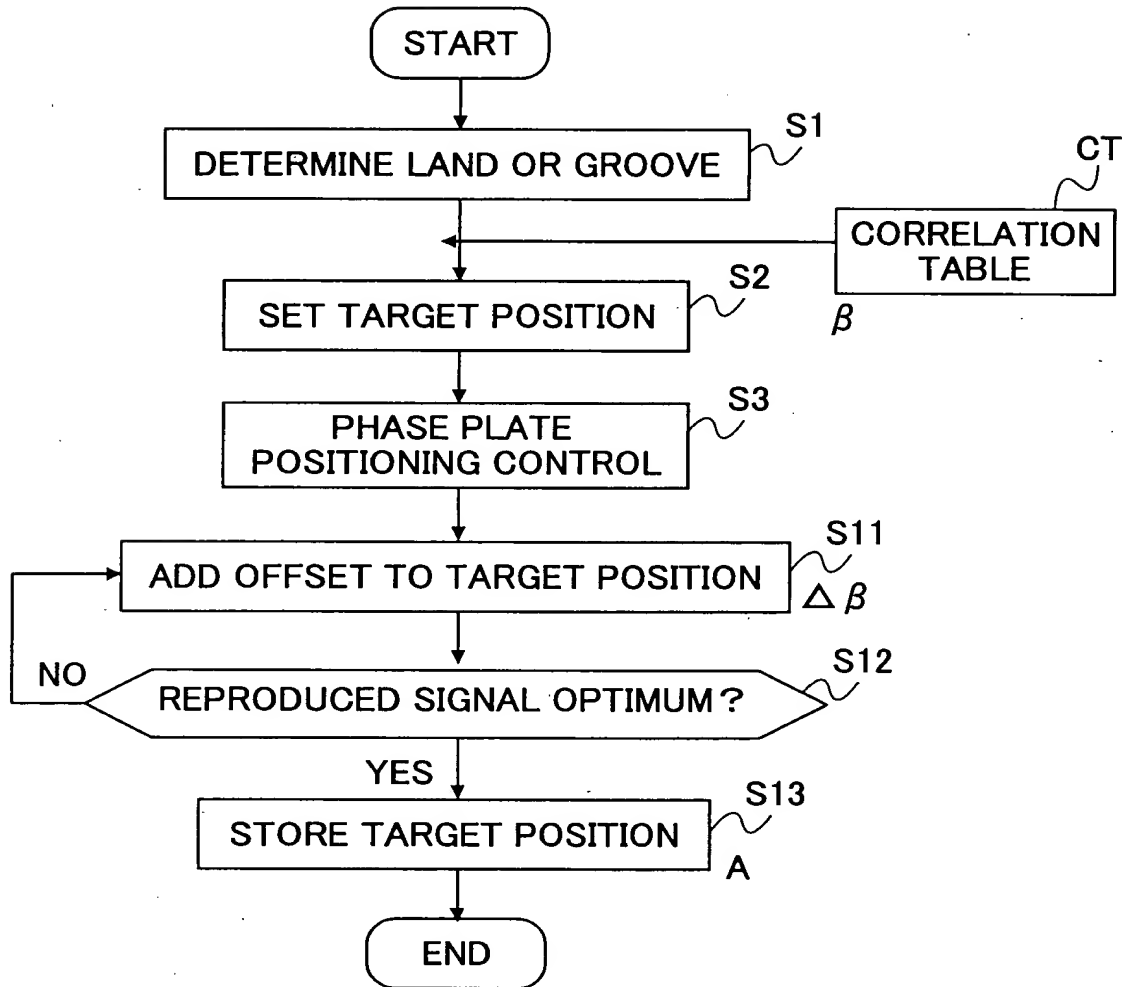


FIG.13



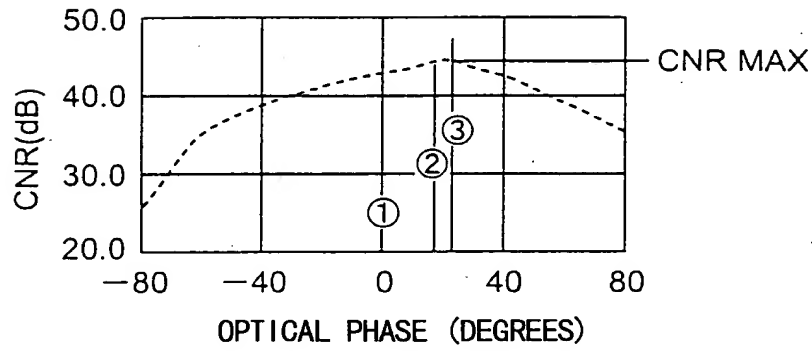
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FIG.14



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FIG. 15



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FIG. 16A

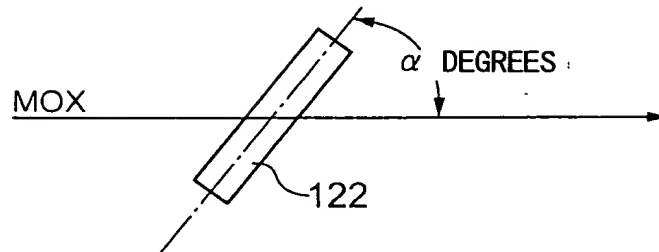


FIG. 16B

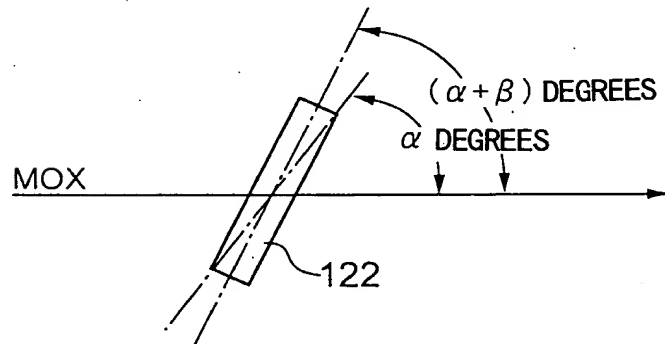
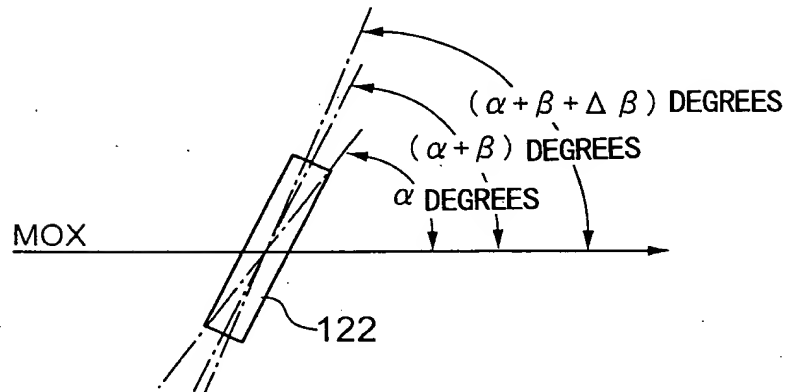
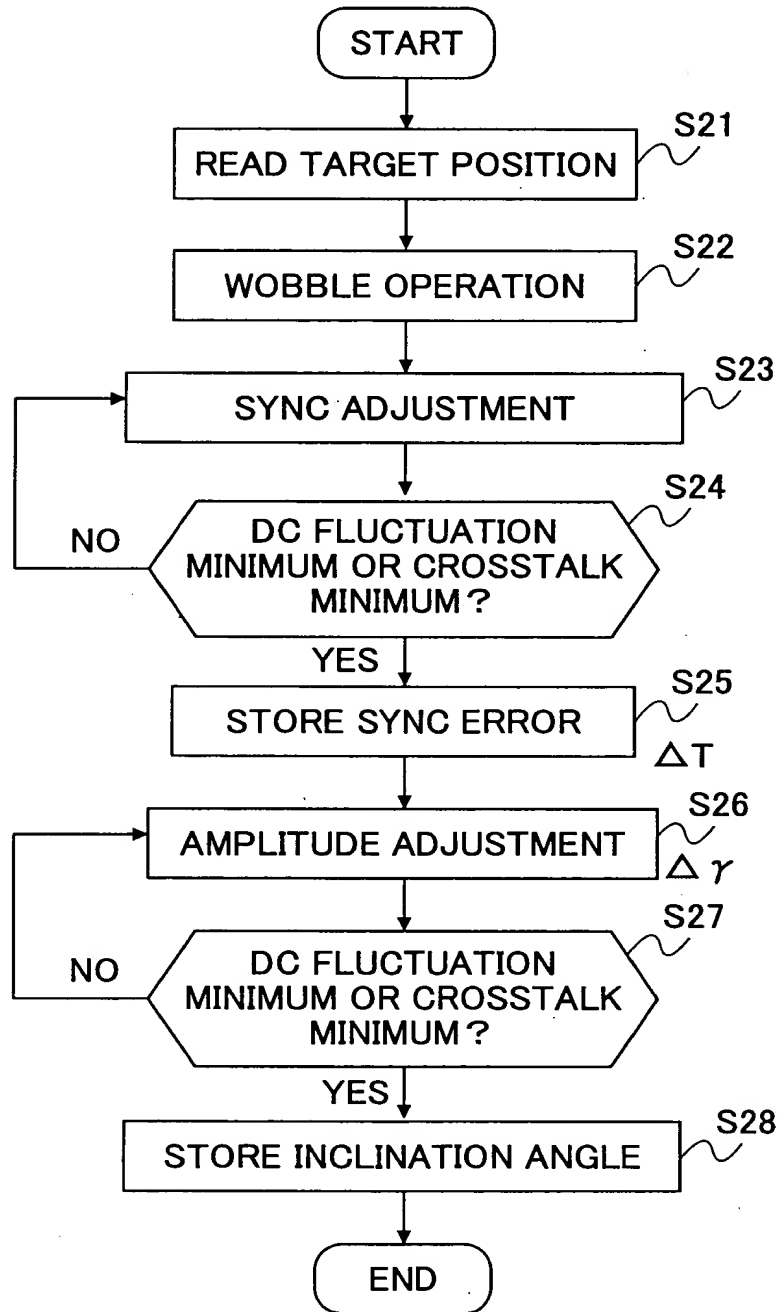


FIG. 16C



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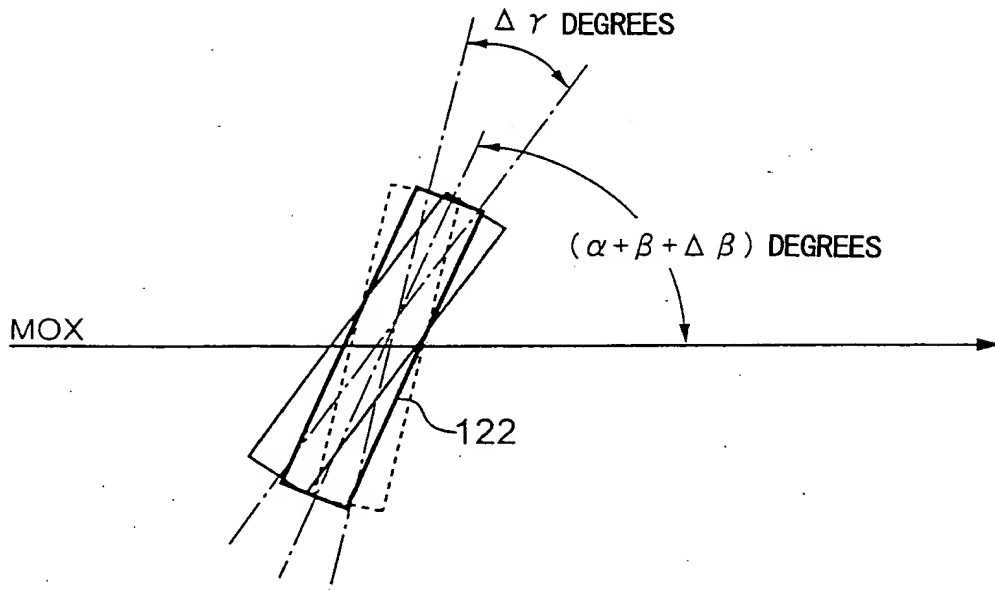
FIG.17



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FIG. 18



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FIG. 19

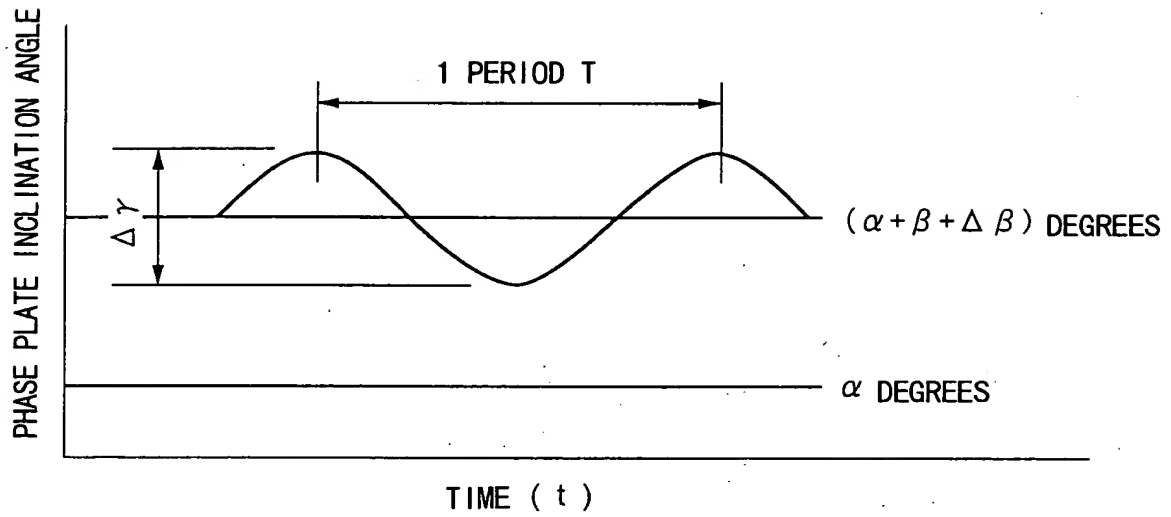
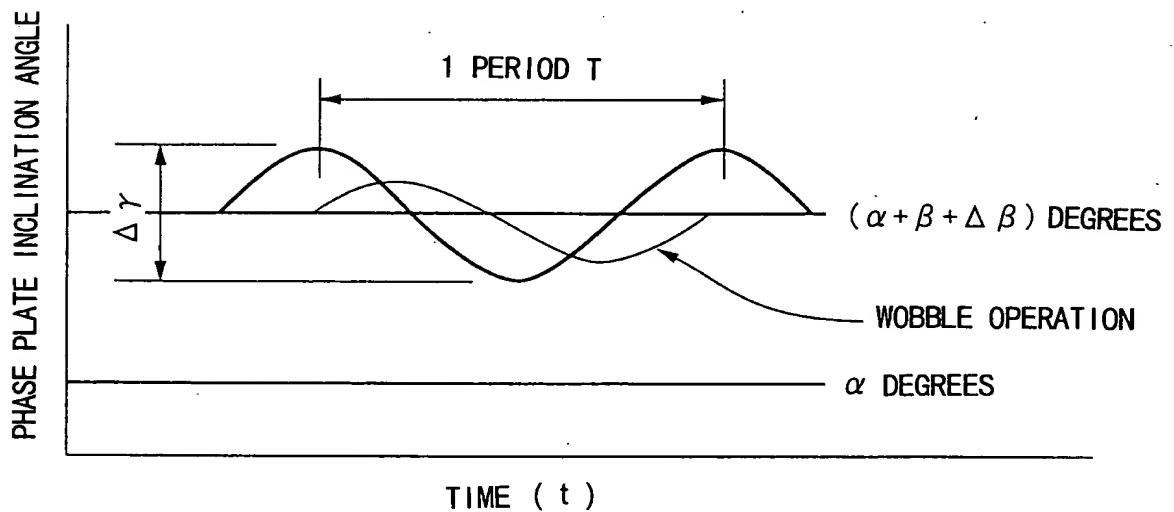


FIG. 20



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FIG. 21

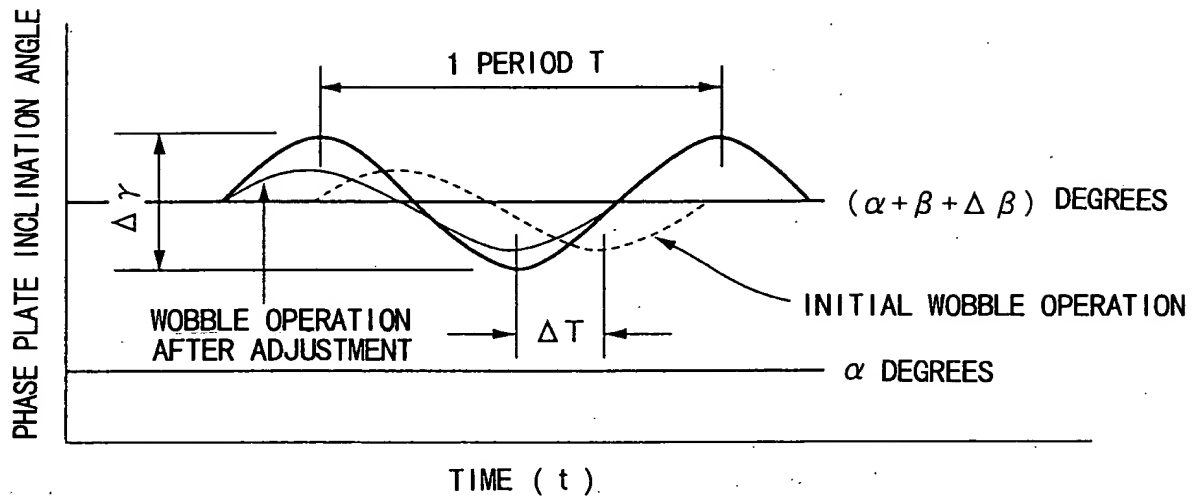


FIG. 22

